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PROGRAMME, THE ENVIRONMENT FUND AND ADMINISTRATIVE AND OTHER BUDGETARY MATTERS

Revision of the Financial Rules of the Fund of the United Nations Environment Programme

and

Revision of the General Procedures governing the Operations of the Fund of the United Nations Environment Programme

Report of the Executive Director

Summary.

This report has been prepared in line with Governing Council decision 19/25 of 7 February 1997 which requested the Executive Director to submit to the Council at its twentieth session a report on the comprehensive review of the Financial Rules of the Fund of the United Nations Environment Programme.

* UNEP/GC.20/1.

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Suggested action by the Governing Council

The Governing Council may wish to endorse the report of the Executive Director on revision of the Financial Rules of the Fund of the United Nations Environment Programme and revision of the General Procedures governing the Operations of the Fund of the United Nations Environment Programme, as contained in document UNEP/GC.20/27.

1. By decision 19/25 the Governing Council approved various revisions to the Financial Rules of the Fund of the United Nations Environment Programme and the General Procedures governing the Operations of the Fund of the United Nations Environment Programme.

2. In the same decision the Council strongly urged the Executive Director to consult appropriate United Nations authorities and other relevant United Nations programmes and agencies that receive voluntary contributions or counterpart contributions to ensure that the appropriate and necessary procedures and mechanisms are in place before any such contributions are sought or accepted, and requested her to consult the financial authorities of the United Nations and other relevant United Nations programmes and agencies on the comprehensive review of the financial rules of the Fund of the United Nations Environment Programme and to report thereon to the Council at its twentieth session.

3. In pursuance of this decision, the secretariat consulted the United Nations Controller, the Office of Internal Oversight Services (OIOS), the United Nations Drug Control Programme (UNDCP), and the United Nations Development Programme (UNDP), some other United Nations agencies in respect of procedures and mechanisms which are in place in those organizations to receive counterpart contributions. UNDCP, UNDP and the World Food Programme accept counterpart contributions both in cash and in kind in relation to specific activities approved by their Governing bodies. Their procedures and mechanisms for the receipt of counterpart contributions are similar to those which are in place in UNEP.

4. UNEP accepts counterpart contributions from Governments, cooperating agencies, supporting organizations or other sources in cash or in kind to meet the cost of specific services and facilities as set out in individual project documents and in keeping with the Financial Rules of the Fund of the United Nations Environment Programme.

5. Counterpart contributions from non-governmental sources in excess of $ 500,000 are accepted only with the prior approval of the Governing Council or its subsidiary body. Counterpart contributions are accepted from profit-making organizations as long as the contributions are directed towards activities consistent with the approved programme of work and it is evident that the contributing organization is not involved in activities that are harmful to the environment.

6. The revised Financial Rules of the Fund of the United Nations Environment Programme were cleared by OIOS in February 1997 and by the United Nations Controller on 3 March 1998, and a complete revised version of the "Legislative and Financial Texts Regarding the United Nations Environment Programme and the Environment Fund" was presented to the Secretary-General on

31 July 1998 for promulgation. The Controller informed UNEP that the amended rules may be applied in the meantime. The texts of the revised Financial Rules and General Procedures of the Environment Fund were promulgated by the Secretary-General on 8 October 1998 and are being circulated as Governing Council document UNEP/GC.20/INF/12.

7. The revised Financial Rules and General Procedures meet the current requirements of UNEP, and no comprehensive review is required. However, following the streamlining and rationalization of the administrative arrangements for UNEP, the Programme and the United Nations Office at Nairobi (UNON) will keep the Financial Rules and General Procedures under review and, if their further revision is required, will consult the Governing Council or its subsidiary body before submitting any revisions for promulgation by the Secretary-General.

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PROGRAMME, THE ENVIRONMENT FUND AND ADMINISTRATIVE AND OTHER BUDGETARY MATTERS

Functioning of the regional offices and proposed measures for the strengthening of regionalization and decentralization

Report of the Executive Director

Summary

This document, prepared in response to Governing Council decisions 19/31, on strengthening of the regional offices of the United Nations Environment Programme (UNEP), and SS.V/1, part II, on UNEP's regional offices, examines the functions of the regional offices and their common core mandates and responsibilities and outlines measures proposed for the strengthening of regionalization and decentralization.

Suggested action by the Governing Council

The Governing Council may wish to:

Welcome the report of the Executive Director on the functioning of the regional offices and proposed measures for the strengthening of regionalization and decentralization;

Take note of the changes made by the Executive Director at UNEP headquarters and in its regional offices in order to strengthen regionalization and ensure that regional priorities are reflected in UNEP's core programme and that UNEP's global programme is reflected in the activities of the regional environmental forums and organizations;

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* UNEP/GC.20/1.

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Request the Executive Director to continue to strengthen regionalization and decentralization, while maintaining the central coordinating role of the Programme's headquarters in Nairobi.

I. REPORT ON THE FUNCTIONING OF UNEP'S REGIONAL OFFICES

A. Introduction

1. UNEP has taken resolute steps to revitalize its regional offices in response to Governing Council decisions 19/1 (the Nairobi Declaration), 19/31 and SS.V/1, part II. In decision 19/31 the Council requested the Executive Director to strengthen the regional offices of UNEP by providing them with appropriate functional and administrative capabilities to enable decentralized implementation of regional environmental programmes and priorities, as developed by regional and subregional ministerial meetings. In decision SS.V/1 the Council urged the Executive Director to work with Governments to establish a common core mandate and set of regional responsibilities and propose adequate allocations for each regional office, while recognizing the specificities of each of the offices. The process of revitalization also constitutes a response to the Nairobi Declaration, which stated that "Regionalization and decentralization should be strengthened through the increased involvement and participation of regional ministerial and other relevant forums in the United Nations Environment Programme process, complementary to the central coordinating role of the Programme's headquarters in Nairobi".

B. Common core mandate and responsibilities of the regional offices

2. UNEP has six regional offices with the overall responsibility to influence environmental policy-setting and implementation in the regions in line with UNEP's global mandate, as approved by the Governing Council, taking into account specific regional needs and priorities. To this end, the regional offices share a number of common functions and responsibilities, as detailed below.

3. The primary role of the regional offices is to represent UNEP and help to present UNEP global policies and enlist support for them in each region. At the same time, the offices bring regional perspectives to the development of UNEP policy and programmes and keep headquarters informed of important developments in the regions.

4. The regional offices assist in the implementation of UNEP's global programmes in the regions, fully utilizing the advantages related to their capacity, location and partnerships.1/ To that end they promote and coordinate regional and subregional cooperation, institutional strengthening and capacity-building, particularly through training and the provision of expertise in the policy, institutional, scientific, technical and legal areas. They also provide substantive and logistic support to region-based UNEP programmes, such as environmental assessment. In the implementation of

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1/ The Regional Office for North America will mainly have a liaison role and will not implement programmes in the same way as the other regional offices.

such activities, the regional offices promote cooperation between UNEP, non-governmental organizations and the private sector. A primary responsibility is to mobilize financial resources for UNEP and its activities in the region, especially for priority activities identified by ministerial and other forums.

5. Programme concentration areas vary from one regional office to another and are shaped by the specific priorities determined by regional environmental and other policy forums. An important part of the work of regional offices is the provision of secretariat functions on request to such regional forums, for example the African Ministerial Conference on the Environment and the Forum of Environment Ministers of Latin America and the Caribbean. The offices also provide advisory services to help Governments translate global commitments into national action for the protection and enhancement of the environment. They also assist in the development of policies and programmes on global and regional environmental issues between and within Governments.

6. The regional offices play an important role in raising public awareness of environmental problems and creating constituencies for environmental action through such activities. They help broaden the constituency for UNEP within the regions.

7. The regional offices, especially those in North America and Europe, also act as liaison offices and promote cooperation and coordination with the rest of the United Nations system as well as with governmental, intergovernmental, non-governmental and private sector agencies in their regions.

C. Proposed allocations for the regional offices

8. Information on the proposed allocations for the regional offices can be found in the "Proposed programme budget of UNEP, revised requirements for 1998-1999 and proposed requirements for 2000-2001" (UNEP/GC.20/22).

9. The UNEP secretariat has initiated action to provide the regional offices with both core staff to carry out their common mandate and regional responsibilities, and outposted staff from other UNEP programmes in areas such as law, industry and assessment. Such staff are budgeted for under the substantive programmes, not the regional office component.

D. Functional and structural relationship between UNEP headquarters and its regional offices

10. The six regional offices are an integral part of UNEP and play a key role in the implementation of UNEP's programme. Along with a small coordinating office in Nairobi, they form the Division of Regional Cooperation and Representation.

11. In order to facilitate enhanced regional delivery, a coordination office has been set up in Nairobi. This office is headed by the Director of the Division of Regional Cooperation and Representation, who is accountable to the Deputy Executive Director and reports through him to the Executive Director. This office is responsible for promoting regional policy

integration and coordinating programme planning. Its key objectives are: to ensure regional perspectives and priorities are adequately reflected in UNEP's global programmes; to help inform major regional environmental policy forums of UNEP priorities; to provide a "one-stop shop" to enable regions to access the headquarters knowledge base and headquarters to access the regional knowledge base for policy-relevant advice and information regarding major regional issues; and to ensure that the regional offices are equipped to meet the priorities expressed in the work programme.

12. While the regional offices work directly with the substantive units in the implementation of the regional sections of the programme, they ensure close liaison with the co-ordinating office in Nairobi to ensure the efficient flow of information and the harmonious implementation of the programme of work.

13. Each regional office is headed by a Regional Director who is responsible for representing UNEP in the region and manages the work and budget of the office. The Regional Directors are members of UNEP's Management Board and participate in the secretariat's ongoing agenda-setting process. They physically attend only a few important Board meetings per year. The Director of the Division of Regional Cooperation and Representation ensures feedback between the regional offices and the Management Board.

14. The regional seas units are an integral part of UNEP's regional programme delivery and help implement both global and regional priorities as appropriate. The Regional Directors will provide political support and representation, and the relevant Division will provide institutional and substantive support to the regional seas programmes. In addition, closer ties will be sought with regional offices and information staff of Habitat to help ensure synergy in programme implementation.

II. MEASURES FOR THE STRENGTHENING OF REGIONALIZATION AND DECENTRALIZATION THROUGH THE INVOLVEMENT OF REGIONAL MINISTERIAL AND OTHER FORUMS

15. Most of the regional offices play an important role in regional forums. Over the next biennium, UNEP proposes to enhance this role further. As the level of involvement by the regional offices in such forums varies greatly between the different regions, proposed measures for the strengthening of regionalization must be region-specific. However, the Latin American and Caribbean Forum of Ministers and Inter-sessional Committee and Inter-Agency Technical Committee detailed below could be used as a model by UNEP and its other regional offices, when and where appropriate, as they strive to strengthen regionalization and decentralization through the involvement of regional ministerial and other forums.

A. Africa

16. The Regional Office for Africa is the secretariat for the African Ministerial Conference on the Environment (AMCEN), the key African intergovernmental body on the environment. AMCEN currently serves as a vehicle for identifying regional programme priorities on the environment, which are used by UNEP in its programming. UNEP will strive to play a greater role in the development of the agenda for AMCEN meetings and assist

AMCEN forums in determining the regional priorities that need to be reflected in UNEP's global programme. Decisions taken at sessions of the OAU Council of Ministers and summits of Heads of State will also continue to guide programming by UNEP, which will provide more substantive inputs to these forums in the coming biennium. UNEP will also become more fully involved in the Secretary-General's initiative on Africa as well as initiatives being pursued by the Economic Commission for Africa, the African Development Bank, the Intergovernmental Authority on Development and the Southern African Development Community.

B. Asia and the Pacific

17. Given the size and diversity of the Asia and Pacific region, the Regional Office is actively involved in a number of separate regional forums including the Association of Southeast Asian Nations, the South Pacific Regional Environment Programme, the South Asia Cooperative Environment Programme and the Environment Congress for Asia and the Pacific (ECO ASIA). The Regional Office also provides a chairperson for the Environment and Natural Resources Subcommittee of the Regional Inter-Agency Committee for Asia and the Pacific. In addition, UNEP and the Economic and Social Commission for Asia and the Pacific convene a joint ministerial meeting every five years, and a King Bhumibol Trust Fund has been mooted to support ministerial meetings on a biennial basis, drawing some lessons from the experience in Latin America.

C. Europe

18. In Europe there are a multitude of ministerial and other environmental forums. The Regional Office plans to further expand and strengthen its cooperative links with Governments and relevant intergovernmental and non-governmental forums, to highlight global environmental issues of priority to UNEP in environment and development forums and to represent the Executive Director in forums such as the Economic Commission for Europe, the Organisation for Economic Cooperation and Development and the European Union.

D. Latin America and the Caribbean

19. The UNEP regional office in Latin America and the Caribbean serves as the secretariat for the Forum of Environment Ministers of Latin America and the Caribbean. This forum usually meets once every two years; its limited-membership Inter-Sessional Committee meets in between the full sessions. These two bodies help UNEP to identify priorities for the region, reach positions of common interest regarding major items on the global environmental agenda, and match UNEP global priorities with the specific needs of the region. UNEP's involvement in the Forum is very active, enabling it to seek guidance and harness the support of the ministers for its programme of work in the region. An Inter-Agency Technical Committee, made up of UNEP, the United Nations Development Programme and the Inter-American Development Bank (IDB), is responsible for designing projects and seeking funding to help implement the decisions of the Forum, especially the regional action plan. Partnerships with other organizations, such as the Economic Commission for Latin America and the Caribbean and the World Bank, will be sought so as to broaden the membership of the Technical Committee (see annex for more details).

E. West Asia

20. In West Asia, the Regional Office will strive to forge closer links with the Council of Arab Ministers Responsible for the Environment (CAMRE), and its secretariat at the League of Arab States. The Arab programme for sustainable development, prepared under the auspices of CAMRE, has guided and will continue to guide UNEP activities in the region, bearing in mind UNEP's global priorities. UNEP will also forge closer links with the Economic and Social Commission for Western Asia, the Gulf Cooperation Council and the Arab Gulf Programme for the United Nations Development Organizations.

Annex

Institutional mechanisms and regional action plan for the strengthening of the Forum of Environment Ministers of Latin America and the Caribbean

A. Institutional mechanisms

1. The Forum of Environment Ministers of Latin America and the Caribbean, in its capacity as the highest body, will have the following functions, taken from the decisions of the ninth and eleventh meetings of Ministers:

(a) To analyse, seek concerted agreement, assess and follow up on matters of importance to sustainable development within its sphere of competence;

(b) To provide guidance for and assess regional cooperation in environmental matters within the context of sustainable development;

(c) To assess, discuss and reach concerted agreement on regional positions concerning items on the international environmental agenda;

(d) To consider international financing issues linked to the implementation of Agenda 21 commitments in the region;

(e) To evaluate the fulfilment of agreements and objectives of previous ministerial meetings;

(f) To approve the Action Plan for four years, based on the proposal submitted to it for consideration by the Inter-Sessional Committee;

(g) To formulate specific mandates for the Inter-Sessional Committee to implement the projects approved for the first biennium, and to prepare the project proposals that should be submitted to it at its next meeting;

(h) To provide guidance for and assess UNEP activities in Latin America and the Caribbean in the terms established in the decisions adopted by the Governing Council of UNEP.

2. The Inter-Sessional Committee, being the body entrusted with the task of following up the decisions of the Meeting of Ministers and of presenting and promoting the interests of the region in the various forums of the international system, will have the following functions, taken from the decisions of the ninth and eleventh meetings of Ministers:

(a) To submit a regional action plan proposal for the following four-year period to the Forum of Ministers for consideration;

(b) To take all pertinent steps, in accordance with the mandates formulated by the Forum, to implement the projects approved for the first biennium, and provide for their follow-up;

(c) To conduct all the necessary consultations and activities to identify the topics and prepare project profiles identified as being of priority at the next meeting of the Forum of Ministers, so that a decision may be reached on which projects should be developed in greater depth, in the terms indicated in the previous paragraph;

(d) To take all the necessary measures to prepare the project proposals to be submitted at the following meeting of the Forum of Ministers, so that the projects may be implemented in the subsequent biennium;

(e) To follow up the application of the agreements adopted by the meetings of Ministers and review their participation in other pertinent meetings and forums;

(f) To propose the principal objectives of the forthcoming Meeting of Ministers and assess the activities conducted up to that time;

(g) To make recommendations concerning the need to take actions important to fulfilling the decisions of the Meeting of Ministers and the UNEP programme in the region.

3. The Inter-Sessional Committee will identify and select priority topics and projects on the basis of the following criteria:

(a) They should respond to common concerns or priority regional problems identified by the Forum of Ministers;

(b) They should fall within the spheres of competence of the environment ministers;

(c) They should be able to produce economic and social benefits;

(d) They should not duplicate the efforts of other agencies;

(e) They should contribute added value to the related activities being carried out in the region;

(f) There should be possibilities of financing them.

4. UNEP will provide secretariat support to the work of the meetings of the Environment Ministers, through its Regional Office for Latin America and the Caribbean, and will have the following functions in relation to the Regional Action Plan:

(a) To coordinate and develop all the activities required to enable both the Forum of Ministers and the Inter-Sessional Committee to fulfil the functions listed above;

(b) To coordinate the activities of the Inter-Agency Technical Committee referred to below.

5. The Inter-Agency Technical Committee, coordinaced by UNEP, will initially be formed by UNDP and IDB, as well as any other international agencies that wish to form part of it and are considered pertinent to its work by the Forum. The Committee will have the following functions:

(a) To present options for implementing the programme decisions adopted by the Forum in relation to the Regional Action Plan;

(b) To conduct activities aimed at obtaining technical assistance for project design and development;

(c) To conduct activities aimed to identifying potential sources of funding for the projects;

(d) To coordinate the activities of the participating agencies in relation to items on the priority agenda of the Forum;

(e) To set up the Ad hoc Working Groups referred to below, as necessary.

6. National focal points. The national focal points designated by the Environment Ministries or equivalent entities will have the following functions to enable them to interact with the UNEP Regional Office and, when appropriate, with IDB and UNDP:

(a) To serve as a liaison with the Secretariat;

(b) To ensure country-level coordination of the processes required for project preparation and follow-up and, in general, all activities necessary for the operation of the Forum and design and implementation of the Regional Action Plan.

7. The above-mentioned Ad hoc Working Groups will be composed of experts from Governments, the United Nations system, international agencies, the private sector, non-governmental organizations and the Secretariat. Their composition and size will be determined in accordance with the nature of the projects. These ad hoc groups may invite representatives of multilateral banks, regional and global environment funds and donor Governments to participate in them, as well as other international entities, in order to create favourable conditions for project funding and implementation. Each ad hoc group will have a coordinating entity, which will ideally be UNEP, IDB or UNDP, at least during the stage of project initiation. The Ad hoc Working Groups will have the following functions:

(a) To support the Inter-Sessional Committee in preparing project profiles or more detailed proposals for those projects;

(b) To support the Inter-Sessional Committee in the implementation and follow-up of projects incorporated into the Regional Action Plan.

B. Regional Action Plan

8. As a tool for implementing the above-mentioned functions, the Forum of Environment Ministers will have a Regional Action Plan that includes the following elements:

(a) Priority environmental topics of regional interest;

(b) Project profiles for each of the priority topics, broken down into problem areas, lines of action, possible machinery for cooperation and sources of financing. In keeping with the functions of the Forum of Ministers, the projects may be aimed at the exchange of experience on environmental problems common to the countries or at solving multinational problems at the regional or subregional level;

(c) Two working time-frames of two years each, for the next four years.

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PROGRAMME, THE ENVIRONMENT FUND AND ADMINISTRATIVE AND OTHER BUDGETARY MATTERS

Functioning of the specialized offices of the United Nations Environment Programme

Report of the Executive Director

Summary

In response to Governing Council decision SS.V/1 of 22 May 1998, this report provides information on UNEP's specialized offices, namely the Industry and Environment Programme Activity Centre (IE/PAC) in Paris, and the International Environment Technology Centre (IETC) in Osaka and Shiga, Japan. 1/

Suggested action by the Governing Council

The Governing Council may wish:

1. To note the report of the Executive Director;

2. To endorse the steps taken by the Executive Director to bring greater efficiency through synergies between the main units in the United Nations Environment Programme addressing technology transfer, environmental issues related to industrial and urban activities (and in particular production and use of chemicals), as well as of energy, and the related key economic and trade aspects.

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* UNEP/GC.20/1.

1/ Effective 1 January 1999, the functions of these offices will be carried out by the Division of Technology, Industry and Economics.

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I. INDUSTRY AND ENVIRONMENT PROGRAMME ACTIVITY CENTRE

1. The Industry and Environment Office (IEO), located in Paris, was established in 1975, three years after the creation of UNEP itself. Its objective was to integrate environmental criteria into industrial development. At that time, IEO was totally funded from the Environment Fund. In 1991, the Governing Council, in its decision 16/25 of 31 May 1991, decided to give IEO the status of a programme activity centre (PAC) allowing for greater autonomy in administration and financial management. The Governing Council also requested the Executive Director to accelerate the development of IE/PAC and its network to help promote a global exchange of environmentally sound technologies.

2. In 1994, IE/PAC was also designated to perform a "clearing-house" function under the Montreal Protocol. The same year, IE/PAC was also made responsible for energy and environment issues in co-operation with the Riso Collaborating Centre in Denmark. The establishment of a number of Industry Officers in various regional offices has ensured regional delivery of IE/PAC activities.

3. Since 1991, funding for IE/PAC has come from three different sources: the Environment Fund, the Multilateral Fund of the Implementation of the Montreal Protocol on Substances that Deplete the Ozone Layer, and counterpart contributions, in particular from France.

4. The initial focus of IE/PAC emphasized pollution control and resulted in a number of sectoral guidelines, as well as the quarterly review Industry and Environment. Those publications, together with the organization of a number of workshops and seminars, contributed to awareness-raising and initial capacity-building to address existing pollution problems.

5. With the increase in demand from developing countries for support to address the industry and environment problems they faced, combined with the realization that it is more cost-efficient to prevent than to cure, IE/PAC selected its priorities on the basis of the following criteria:

(a) Prevention, rather than repair, of environmental damage;

(b) Focus on sectors with major environmental impacts or emerging pollution problems;

(c) Leverage actions that stimulate greater activity from others;

(d) Support for the implementation of international environmental conventions; and

(e) Support for other UNEP activities.

6. The general approach used by IE/PAC was to:

(a) Define the concepts, policies and tools that would lead to sustainable production and consumption;

(b) Create widespread awareness of these concepts, policies and tools;

(c) Help build up capabilities for implementing them;

(d) Demonstrate their effectiveness; and

(e) Monitor results and achievements regularly.

7. This strategy led to the following priority activities:

(a) Development of the cleaner production programme as well as the awareness and preparedness for emergencies at local level (APELL) programme, both of which are reviewed biennially at high level conferences;

(b) Promotion of the development and use of voluntary initiatives and codes of conduct;

(c) Publication of 40 technical guides in the technical report series, 17 training manuals, equivalent number of case-study booklets, and additional relevant publications totalling over 250, which are generally sold, but remain free-of-charge for developing countries;

(d) Creation of a Web-site with interactive components;

(e) Organization of numerous awareness-raising and capacity-building workshops and seminars worldwide;

(f) Implementation of networks and working groups in key industry sectors such as textile, metal finishing, agro-industry, pulp and paper, oil exploration and exploitation, mining, and tourism; and

(g) Launching of a number of demonstration projects in numerous countries.

8. IE/PAC addressed technology transfer issues in a number of ways:

(a) Development of information exchange systems on technologies and policies (the International Cleaner Production Information Clearing-house and the OzonAction Information Clearing-house);

(b) Supporting the establishment and use of environmental management systems and tools such as auditing, reporting, environmental technology assessment;

(c) Institution-building in developing countries (e.g. the establishment of the National Cleaner Production Centre, in cooperation with the United Nations Industrial Development Organization), facilitation of regional networks of Ozone Officers;

(d) Education and training and capacity-building; and

(e) Initiation of a consultative mechanism between providers and users of information on environmentally sound technologies, in cooperation with the International Environmental Technology Centre (Japan) and as an input to the sixth session of the Commission on Sustainable Development.

9. IE/PAC has always adopted a collaborative approach based on a broad participation of industry and government specialists as well as non-governmental organizations. In 1984, IEO and the International Chamber of Commerce (ICC) organized the first World Industry Conference on Environmental Management (WICEM). Every year, IE/PAC organizes consultative meetings consistently attended by more than 40 industry associations from all parts of the world, with a view to exchanging information, developing partnerships, and assessing industry's progress in implementing Agenda 21. Co-operation with other United Nations partners, in particular the United Nations Industrial Development Organization, the International Labour Organization, the International Maritime Organization, United Nations Development Programme, and the World Health Organization, has been also increasing.

II. INTERNATIONAL ENVIRONMENT TECHNOLOGY CENTRE

10. The International Environmental Technology Centre, located in Osaka and Shiga, Japan, was established in 1991 pursuant to Governing Council decision 16/34 of 31 May 1991, following an offer and financial support of the Government of Japan. Its mandate is to promote the transfer of environmentally sound technologies (ESTs), with a special focus on environmentally sustainable management of big cities and fresh-water lake/reservoir basins. IETC was officially inaugurated in 1994. It is funded primarily by a trust fund, to which Japan is currently the only contributor, and by the Environment Fund. The Centre is supported by two foundations, the Global Environment Centre Foundation (GEC) in Osaka and the International Lake Environment Committee (ILEC) in Shiga.

11. During its four years of effective operation, the IETC has developed activities with the following objectives:

(a) Improved access of information on environmentally sound technologies to help decision makers in developing countries and countries with economies in transition make informed choices. The information is provided in the form of a directory with relevant information, case-studies, periodical publications and reports in both electronic format, including the Internet, and hard copy. Publications focused on: sustainable management of urban waste water and stormwater, water leakage prevention in urban water supply systems; air quality management; and management of lakes and reservoirs to address eutrophication;

(b) Enhancing technology cooperation and transfer, with the development of maESTro, a technology database containing 1000 entries, and accessible through the Internet. Demonstration activities in Poland, the Philippines, and in the Mekong River have also taken place; and

(c) Increasing capacity-building for urban management and environmental technology assessment with a series of workshops and seminars in Africa and Latin America and the Caribbean.

12. IETC has adopted a collaborative approach with other partners and United Nations agencies and in particular the United Nations Centre for Human Settlements (UNCHS) (Habitat) (Sustainable Cities Programme) and the United Nations University (UNU).

III. BRINGING SYNERGIES BETWEEN THE UNEP OUT-POSTED CENTRES AND UNITS

13. IE/PAC and IETC have cooperated in a number of activities, in particular on the inventory of sources of information of environmentally sound technologies, the consultative process between users and providers of information of environmentally sound technologies (undertaken for the CSD), the development of a UNEP Environmental Technology Assessment activity, and a number of joint workshops.

14. Given the above, the following conclusions may be drawn:

(a) After 23 years of operation, IE/PAC has established and enhanced UNEP's solid reputation and credibility in the field. Its leadership role to raise awareness, build capacities, facilitate exchange of information on cleaner and safer technologies in the various industrial sectors and in support of the Montreal Protocol and other conventions, as well as contribute to the technology transfer issue, is well established;

(b) However, as reflected in the CSD discussions and decisions of the Commission on Sustainable Development during the last two years, needs still remain very high. In all industrial sectors, there is a need for technology innovation, improved knowledge-sharing, and technology management. In addition, as was clearly highlighted in the UNDP Human Development Report 1998, while industry has to use cleaner and safer processes and practices, and supply cleaner and safer products, there is also a need to increase the demand of such products by consumers as well as Governments and industry through their own purchasing practices;

(c) After only four years of operation, IETC has already achieved significant results in improving access to information on environmentally sound technologies and building capacities, particularly in the field of urban and water management. With the rapidly growing urbanization, the need to improve environmental management of cities, and to develop the corresponding technology cooperation, is stronger than ever. Similarly, the shortage of freshwater, as well as its increasing contamination, call for improved management tools and technologies, and related capacity-building. IETC is uniquely placed to respond to these needs, enhance overall recognition of those issues and enlarge the image of UNEP in this field.

15. In 1991, the Governing Council highlighted the necessity of coordinating the activities of IETC and IE/PAC, with each centre addressing the issue of environmentally-sound-technology transfer in its respective field of activity.

16. Recently, the need for building ynergies between the two centres and other UNEP units under one umbrella has become apparent. Economic instruments stimulate the promotion of technology development and transfer. Chemicals issues, including chemical production and use, have to be addressed by industry managers and local authorities as well as by Governments. The work undertaken by UNEP in the field of chemicals can benefit from the lessons learned from the OzonAction programme, which aims at phasing out the use of a specific family of chemicals, ozone-depleting substances (ODS). Such need for synergies is addressed by the new organizational structure of UNEP.

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PROGRAMME, THE ENVIRONMENT FUND AND ADMINISTRATIVE AND OTHER BUDGETARY MATTERS

Mercure satellite communications system: report on a full review and cost-benefit analysis of the system and the experience gained in its initial operation.

Report by the Executive Director

Summary

The present report has been prepared in response to Governing Council decision 19/30, to review the experience gained in the initial operation of the Mercure satellite communications system. It also provides a preliminary cost-benefit analysis of Mercure global services since the system attained full operational status at the end of April 1998. Thus, while a comprehensive cost-benefit analysis would normally have covered at least 12 months of Mercure global operation, this covers only a limited period. Delays in receiving the Intelsat authorization required to operate the satellite earth stations at United Nations Environment Programme (UNEP) headquarters in Nairobi, the conclusion of negotiations with the Government of Kenya and the Kenya Posts and Telecommunications Corporation (KPTC) regarding a Mercure services agreement, and delays in achieving full operational status of some remote earth stations militated against full global operation of Mercure until late June 1998. The rescheduling of the twentieth session of the UNEP Governing Council from May to February 1998 has further reduced the time available to achieve a reasonable period for assessing the full costs and benefits associated with Mercure.

The focus of UNEP, since February 1998, has been on consolidating the operational network of 15 Mercure installations worldwide, seeking to integrate the system more effectively with the United Nations global telecommunications network and, accordingly, to achieve authorization for

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voice telephony over Mercure and access to the system by all United Nations agencies in Nairobi. Full integration of data services has already been achieved with the United Nations global network and, where negotiations with the Government of Kenya and KPTC are concerned, UNEP is currently waiting for details on the terms and conditions under which voice and access to the system by other United Nations agencies would be agreed and put into operation.

Notwithstanding the time constraints, projected costs and benefits have been assessed by taking into account the existing and anticipated patterns of telecommunications usage of the globally located UNEP secretariat and its partners. The analysis overwhelmingly indicates, for the level of services provided, that Mercure is already cost-effective in delivering data, internet, videoconference and facsimile services and will be even more so when voice telephony is added in the future.

Suggested action by the Governing Council

The Governing Council may wish to:

1. Recall its decisions 17/38 of 21 May 1993, 18/47 of 25 May 1995 and 19/30 of 7 February 1997;

2. Take note of the report of the Executive Director;

3. Express once again its gratitude to the donors for their generous contribution to the initial Mercure configuration, which currently facilitates access by the United Nations Environment Programme and its partners to data, internet, videoconference and facsimile services, enhancing the organization's capability to fulfil its mandate for the delivery of environmental data and information in a timely, cost-effective and efficient manner;

4. Express its gratitude to the Government of the Republic of Kenya for hosting and authorizing the operationalization of the Mercure facilities at UNEP headquarters;

5. Express its gratitude to all host countries of the Mercure stations for their ongoing support and willingness to participate in the project to operate the earth stations;

6. Express its gratitude to the Government of Norway for its generous contribution to the United Nations Environment Programme to establish and maintain the UNEPnet Implementation Centre in Arendal, Norway, essential to the successful operation and maintenance of Mercure and UNEPnet;

7. Encourage the Executive Director to maximize the cost-effectiveness of the Mercure network by achieving optimal integration with the United Nations global telecommunications system, particularly with regard to the availability of voice telephony and the sharing of all Mercure services with United Nations agencies in Nairobi;

8. Encourage the Executive Director, with special regard to the provisions of paragraph 5 of the present decision, to endeavour to reach an

early conclusion of the negotiations with the Government of Kenya seeking authorization of voice telephony over Mercure and access to the system by all United Nations organizations in Nairobi;

9. Encourage the Executive Director to continue to make the UNEPnet/Mercure system available for utilization by the United Nations telecommunications system and other organizations in the United Nations system on a cost-sharing basis at sites where technically and economically feasible;

10. Authorize the Executive Director to expand co-funded efforts with partner organizations of the United Nations Environment Programme for the continued implementation, operation and utilization of UNEPnet/Mercure;

11. Authorize the Executive Director to engage in collaborative programmes with other donors to provide for the continuing development of the UNEPnet infrastructure through extra-budgetary support;

12. Request the Executive Director to ensure that a comprehensive review and cost-benefit analysis of the UNEPnet/Mercure system, including the UNEPnet Implementation Centre, be presented to the Governing Council at its next session, allowing time for the full impact of operationalizing the network to be measured in terms of efficiency and cost-benefit;

13. Encourage countries with relevant environmental data and information assets of value for improved environmental monitoring and management to make them readily accessible to all countries, especially developing countries, for ease of delivery through this initiative of the United Nations Environment Programme.

I. BACKGROUND TO THE MERCURE PROJECT

1. In paragraph 10 of its decision 19/30 of 7 February 1997, the UNEP Governing Council requested the Executive Director, once the Mercure system was fully operational, to ensure that a full review and cost-benefit analysis of the system and the experience gained in its initial operation was carried out and to submit a report thereon to the Council at its twentieth session.

2. The present report is prepared in response to the that request, but only provides an indicative cost-benefit analysis because of delays in the Intelsat authorization to operate the satellite earth stations at UNEP headquarters in Nairobi, extended negotiations with the Government of Kenya and KPTC regarding a Mercure services agreement, and delays in achieving full operational status of some remote earth stations in the network. The Mercure stations at UNEP headquarters did not become operational in effect until the end of April 1998 and persistent service faults at several remote installations meant that their connectivity remained at technically unacceptable levels until June 1998. The bringing forward of the twentieth session of the UNEP Governing Council from May to February 1999 has further reduced the time available to achieve a reasonable period for assessing the full costs and benefits associated with Mercure. Some services offered by Mercure are also new to the secretariat, further complicating the scope of the current analysis.

3. The Mercure satellite telecommunications system was designed in the early 1990s by six countries of the European Space Agency (ESA) in response to the call in chapter 40 of Agenda 21, to utilize modern electronic telecommunications to improve access to, and the exchange of, environmental data and information for responsible decision-making concerning the environment. Particular emphasis was placed at the time on demonstrating the data and information exchange potential of satellite communications in developing countries, streamlining the database transfer and exchange requirements of the UNEP Global Resource Information Database (GRID), and raising the efficiency of the globally distributed UNEP secretariat and its cooperating partners through access to advanced telecommunications facilities.

4. The six European donor countries (Austria, Belgium, Norway, Spain, Switzerland and the United Kingdom of Great Britain and Northern Ireland), from the outset of the Mercure project, assigned responsibility for the design, management oversight and implementation of the project to ESA. Total investment in the Mercure project by the European donors was estimated at the time to be approximately $14 million. The proposed responsibility of UNEP under the project agreement was to provide the umbrella and rationale for implementation of the project and to make provision for certain operational costs, such as leased capacity on the Intelsat satellite transponders serving both the Atlantic Ocean region and the Indian Ocean region. Two classes of satellite earth stations were incorporated in the Mercure design: one to accommodate the high capacity communications requirements of major UNEP destinations (A-class stations operating at a capacity of 384 kilobytes per second), such as its headquarters in Nairobi, and the other to meet the needs of destinations such as cooperating agencies in developing countries where portability, ease of installation and low maintenance requirements were deemed the priority (B-class stations operating at 32 kilobytes per second

capacity). Under the project agreement, UNEP also agreed to contract the Swiss posts and telecommunications service, PTT (subsequently Swisscom), to provide the satellite network monitoring and control via the Mercure hub station located in Leuk, Switzerland.

5. In May 1993, by its decision 17/38 of 21 May 1993, the Governing Council requested the Executive Director to seek agreement with ESA for the acceptance of the Mercure donation. Following extended consultation with the Department of Administration and Management and the Office of Legal Affairs at the United Nations Headquarters, an agreement to effect the Mercure project was signed by the Director General of ESA and the Executive Director of UNEP in November 1994. This decision was subsequently endorsed by the Governing Council in its decision 18/47 of 25 May 1995.

6. Funding of Mercure implementation in UNEP began in 1995, with the approval of $1,117,000 from the Environment Fund reserve to cover activities of a specific project during the period 1995-1996. A further budget of $1,995,000 was approved for the Mercure project by the Governing Council at its eighteenth session, for the 1996-1997 biennium. Recognizing both the programmatic and administrative service potential of Mercure, funds were allocated as follows: $1,295,000 to the programme budget; and $700,000 to the management and administrative support costs (MASC) budget. For the 1998-1999 biennium, continuation of the Mercure project was approved to a total of $1,400,000, with only $700,000 available from the programme budget.

7. To meet the potential shortfall of programme funds for UNEPnet/Mercure in 1998-1999, and to render implementation of Mercure project viable throughout the biennium, the Executive Director was authorized by the Governing Council in its decision 19/30 of 7 February 1997 to engage in collaborative programmes with other donors to provide for the continuing development of UNEPnet/Mercure infrastructure through a collaboration co-funded by the United Nations Environment Programme and other donors. In the last quarter of 1997, an initiative between the Government of Norway and UNEP established the UNEPnet Implementation Centre in Arendal Norway (see paragraph 21 below for details) in response to this request, resulting in a jointly funded project to deliver the UNEPnet/Mercure programme objectives throughout the biennium 1998-1999 and beyond. The Technical Cooperation Trust Fund in support of the UNEPnet Implementation Centre Project financed by Norway calls for an annual contribution of $700,000 from both UNEP and Norway (a total of $1.4 million per annum) up to the end of 2001. Because of financial constraints in 1998, only $500,697 was allocated from the programme budget for UNEPnet/Mercure in 1998. This was supplemented by an addition in 1998 of $650,000 from the Fund programme reserve, to cover both the agreed UNEP contribution to the trust fund project and to ensure that other UNEPnet objectives outlined in the internal UNEPnet/Mercure project were achieved. The same level of allocation from the Environment Fund will be maintained in 1999.

8. During the evolution of Mercure, a satellite telecommunications concept known as the "United Nations backbone" system came under consideration in New York, with a view to servicing the telecommunications requirements of the United Nations and its outposted offices, particularly the system-wide need for voice telephony. UNEP and the Electronic Services Division of the United Nations Secretariat spent considerable time and effort between 1994 and 1996

to avoid any potential duplication of intended services during the development of both systems. Mercure being designed, first and foremost, as a purpose-driven data network, it was assumed at the time that overlap of services would be largely avoided. During the development of Mercure, however, increasing emphasis was placed on reducing the composite telecommunications costs of UNEP by adaptation of the system to accommodate voice telephony. This raised the potential for some duplication of services with the proposed United Nations backbone system and also heightened awareness of possible legal issues to be addressed in relation to the carriage of voice traffic at particular locations within the network, especially at UNEP headquarters in Nairobi.

9. Negotiations with the Government of Kenya on this latter concern are still under way, but the possibility of duplication of services with the United Nations Backbone system diminished considerably in February 1997 when the Secretary-General delivered his report to the General Assembly on telecommunications in the United Nations (A/C.5/51/46), effectively terminating the United Nations backbone initiative. The report stated that the Secretary-General also intended to pursue the integration of the then current United Nations global network with the Mercure network. The United Nations Office of Internal Oversight Services (OIOS) also made reference in 1997, in its review of UNEP (16 October 1997 Audit of the UNEP Mercure Project AFC/7/26/2), to the need for greater integration of Mercure with the redefined United Nations global telecommunications network, a system now comprising primarily leased line connections and out-sourced telecommunications services provided by commercial operators (with the exception of the United Nations peace-keeping network). UNEP and the United Nations Informations Systems Technology Division (formerly the Electronic Services Division) in New York have, as a result, worked consistently to achieve integration to the maximum degree possible and so avoid duplication of services. Both parties agreed in early 1998 that a 1997 OIOS proposal for the International Telecommunication Union (ITU) to conduct a study on integration of the United Nations global system and Mercure, at a cost of approximately $100,000, was no longer necessary given the degree of integration already achieved.

10. Mercure was reconfigured in 1996, with the support of ESA, to accommodate the emerging global standards for data transmission used by the internet. These standards had not yet evolved sufficiently at the initiation of the Mercure project in the early 1990s to be incorporated in the original design of the system. By 1995, however, UNEP and ESA had recognized that reconfiguration of Mercure was the most appropriate way forward to facilitate global exchange of environmental data and information in the future. The exponential growth of Internet technologies in recent years and the high degree of compatibility of UNEPnet with other global information initiatives has underscored the wisdom of the original decision to reconfigure.

II. BACKGROUND TO THE IMPLEMENTATION OF UNEPNET

11. UNEPnet comprises a set of electronic information management services tailored by UNEP and its global partners operating at the cutting edge of electronic information development. UNEPnet makes maximum use of the Mercure telecommunications system, and other compatible telecommunications systems,

to facilitate efficient access to, and the exchange of, environmental information for informed decision-making concerning the environment. UNEPnet can be characterized as the "environmental internet" of UNEP, since the standards adopted to manage and exchange environmental information electronically are those of the global internet, making the UNEPnet information architecture exceedingly compatible with current and projected developments of the established electronic information highways and the needs of an emerging global information society.

12. Given its information architecture, UNEPnet is eminently capable of providing services independent of Mercure, should adequate and equivalent telecommunications capacity exist at locations where exchange of data and information both with and within the UNEPnet network is desired. Mercure currently provides an otherwise unavailable, high-capacity telecommunications backbone, however, that enables UNEPnet to deliver a suite of global data and information exchange services at locations where telecommunications capacities are generally inadequate to serve the needs of UNEPnet participants. As a result of the dedicated capacity provided by Mercure, UNEPnet is able to guarantee delivery of, and access to, environmental data and information within the globally distributed UNEP secretariat and with its partners, without the increasing congestion associated with the global internet.

13. The obvious synergy between Mercure and UNEPnet has caused some confusion regarding the costs associated with developing the electronic information management capacities associated with UNEPnet and those directly associated with Mercure. There are distinct, and sometimes less distinct, divisions apparent in the costs associated with developing and operating a global environmental information system such as UNEPnet, and the cost of providing the underlying telecommunications capacity required to efficiently deliver both technical and administrative services in parallel. This point is examined in closer detail later in this document.

14. UNEPnet has been designed in a collaborative manner with support from institutions and information consortiums across the globe, including centres of excellence in Europe, Asia (Japan) and North America (the United States of America). Ongoing collaboration of particular significance in this regard includes the Group of Eight Environment and Natural Resources Management "virtual library of environment information", an initiative to harmonize the view of geographically dispersed, heterogeneous environmental data and information in a coherent manner, and participation in the development and deployment of the Committee of Earth Observation Satellites (CEOS) Information Locator System (CILS), with a view to increasing significantly the efficiency and flexibility of UNEP and its partners' information service points both locally and on the internet. The latter is coordinated by the Joint Research Centre of the European Union and the German Space Agency. UNEPnet continues to draw on expertise and advice in the best use of cutting-edge information technologies and the Mercure network from numerous additional partnerships, including the United States National Oceanic and Atmospheric Administration (NOAA), the United States National Aeronautics and Space Administration (NASA), ESA and the Japanese Space Agency.

III. CURRENT STATUS OF THE MERCURE PROJECT

15. The Mercure telecommunications system was officially signed over to UNEP by ESA with effect from 1 April 1997. The period of equipment warranty was correspondingly extended to 31 March 1999. A ceremony to formalize the hand-over and commissioning of Mercure from ESA to UNEP was held on 5 November 1997 in Geneva and was well attended by representatives of Governments participating in the project and the international press. Video-conference links were established at the inauguration between Geneva and Bangkok and also with Beijing and La Paz, to demonstrate the utility of Mercure as a modern management tool for an international organization and its partners. At the time of the inauguration, nine of 16 Mercure stations were fully operational. The two stations at UNEP headquarters in Nairobi had been under test since July 1997, but awaiting Intelsat approval to operate in Kenya.

16. The Mercure Governing Board, comprising members of the six donor countries, ESA and UNEP, has provided project oversight since its inception. The Board will remain in existence as an advisory body until September 1999, after which it will be dissolved. In the interim, the Board maintains responsibility for utilization of any remaining funds in the project contingency budget, arising primarily from exchange rate fluctuations. To date, some $320,000 in savings have been allocated in addition to the original donation to include purchase of spares and upgrading of certain Mercure facilities of benefit to participating countries.

17. In February 1998, the Mercure Board held a meeting with the Executive Director and mutual agreement was reached on the need to consolidate the existing Mercure network as a priority by completing any outstanding installations and raising the availability and reliability of Mercure-based services. A second priority on which agreement was reached was to focus on improved utilization of the existing network before any network expansion was considered. The latter proposal responds to a number of requests from developing countries seeking to improve access to environmental information through the installation of new UNEPnet and Mercure connections.

18. By mid-1998, all originally proposed Mercure installations, with the exception of Moscow, and two additional self-financed stations (Arendal and Vienna), had been completed, bringing to 15 the total number of operational sites. UNEP and the Russian Federation had already agreed in late 1997 that recent technological developments in the Russian Federation had significantly reduced the need for a Mercure installation in Moscow to achieve the desired level of connectivity to UNEPnet in the country. The remaining station has meanwhile been stored in Norway and will be redeployed at an appropriate location after consolidation of the existing network, taking into account the need to maximize integration of the United Nations global network with Mercure. Installation of Mercure infrastructure proved unexpectedly difficult in a number of participating countries, owing to restrictive customs regulations, shipping and supply problems and the reprogramming of specialized inputs from industrial contractors in Europe, once original installation schedules had been disrupted.

19. In January 1997, the Government of Kenya and UNEP had reached agreement in principle regarding the utilization of the Mercure system at UNEP headquarters for data services. This was formalized in a supplemental agreement between the Government and UNEP signed in January 1997. Operation of the Mercure stations in Kenya was however, subject to registration by Intelsat through its Kenya signatory, KPTC. The Supplemental Agreement on Mercure also made reference to establishing a services contract between UNEP and a Government nominee (ultimately this became KPTC) to assist UNEP with the operation and maintenance of the Mercure infrastructure at Gigiri. Agreement over the terms and conditions of the service contract proved critical in obtaining Kenya's authorization to use Mercure at UNEP headquarters. After protracted negotiations, Intelsat registration of the stations was successfully undertaken by KPTC on behalf of UNEP in March 1998, noting that UNEP was both the "owner" and "operator" of the system in Kenya. Negotiations were also completed over the terms and conditions of the service agreement between UNEP and KPTC in late April 1998, at which time Mercure could then be operated with the full endorsement of the Kenya Government. The annual cost of the services contract is $150,000, but this can be renegotiated in the future at the written request of either party.

20. During Mercure negotiations between Kenya and UNEP in February 1998, the Executive Director informed the Government that it was the intention of UNEP to seek additional authorization for voice telephony over Mercure and access to the system by all United Nations offices in Nairobi. Negotiations were subsequently undertaken between the two parties and UNEP awaits a proposal from Kenya on the terms and conditions under which these additional services would be authorized.

21. A funding proposal in line with the recommendation contained in paragraph 9 of Governing Council decision 19/30 was submitted to the Government of Norway in June 1997. The proposal sought financial resources sufficient for the establishment of a UNEPnet implementation centre in Arendal, Norway, that would also supplement the needs of Mercure implementation. The proposal was approved in principle in July 1997 to a total of 25.2 million Norwegian kroner (approximately $3.3 million at the time) over five years. A project document designed to deliver support to UNEPnet and Mercure was subsequently set up under a Norwegian trust fund to UNEP in December 1997 and activities began shortly thereafter in Arendal.

22. Two training workshops for technical operations staff at Mercure installations were held in 1998, in March and November, for participants from participating countries in the Indian Ocean and Atlantic Ocean regions respectively. Training covered maintenance, operations and utilization aspects of the UNEPnet and Mercure suite of facilities and services. Particular emphasis was placed on fulfilling the priorities of the consolidation and effective utilization of Mercure.

23. The reduction of costs for satellite transponder capacity in the Atlantic Ocean region anticipated in the report of the Executive Director at the nineteenth session of the UNEP Governing Council in 1997 (UNEP/GC.19/21, paragraph 20) has unfortunately not come about. The current cost remains at $262,000 per annum, in view of the special commercial lease from Intelsat provided by the United Nations Information Technology Services Division in New York. UNEP has approached the Division on several occasions since the

nineteenth session of the Governing Council, seeking to integrate Mercure transponder capacity with the more cost-effective capacity of United Nations Headquarters in New York as soon as possible. Spare capacity to accommodate UNEP on this more cost-effective transponder lease maintained by New York has, however, not become available, according to the Information Technology Services Division. Satellite transponder capacity over the Indian Ocean Region remains leased from Intelsat via the Information Technology Services Division at $95,000 per annum, for a capacity (5 Mhz) equivalent to that used over the Atlantic Ocean region.

24. In day-to-day operational terms, Mercure now carries all the Nairobi data, e-mail, Internet and high-capacity video-conference traffic to and from UNEP and all destinations outside Kenya. Daily e-mail traffic alone from UNEP headquarters amounts to some 100 megabytes in volume. By the end of 1998, Internet-based facsimile services will have been implemented over Mercure, so as significantly to increase their reliability and reduce costs from a number of sites within the global network. Mercure is thus the telecommunications backbone upon which all UNEP telecommunication links except its telephone service out of Kenya now depend and, conditional upon the outcome of as yet incomplete negotiations with the Government of Kenya regarding voice traffic over Mercure and access to the system by all United Nations agencies in Nairobi, this may become the case for other important activities of the United Nations family.

25. In September 1998, the Secretary-General submitted his report to the General Assembly on utilization of the development dividend (A/53/374), as discussed in his report entitled "Renewing the United Nations: a programme for reform" (A/51/950, in particular actions 21 and 22). Item C of the report on the utilization of the development dividend states: "Extension of access of developing countries and countries with economies in transition to Mercure satellite telecommunication system for interconnectivity in environmental information and data (United Nations Environment Programme)", contains a proposal on how Mercure could support the Secretary-General's thrust on "Networking for Development". The Mercure proposal, budgeted at $2,215,000 for the period 1999-2001, is one of eight proposals designed to complement priorities of the medium-term plan that was presented to the General Assembly for its consideration in September 1998. Should that proposal be accepted, the current status of the Mercure network and UNEPnet services would fully complement the objectives stated by Secretary-General. The outcome of the consideration of this matter by the General Assembly will be reported to the Governing Council at its twentieth session.

IV. INDICATIVE COST-BENEFIT ANALYSIS OF THE MERCURE PROJECT: SUMMARY OF FINDINGS

26. The following cost-benefit analysis of the Mercure system draws heavily on an analysis of UNEPnet operations undertaken by the Eurodata Foundation based in the United Kingdom. Eurodata is a consortium made up of representatives of the major European telecommunications operators and has substantial experience in assessing the costs and benefits of networks providing services such as those operating or intended over Mercure and UNEPnet.

27. UNEPnet is recognized as based on the Mercure satellite network owned by UNEP and operated with the assistance of Swisscom, the UNEPnet Implementation Centre in Norway, the United Nations Office at Nairobi and KPTC. Subcontracts have been let by the UNEPnet Implementation Centre for Internet management to RUNIT, a commercial arm of the Technical University in Tromso, Norway.

28. Because the Mercure network has only been providing operational services for a relatively short time, data on current savings have been difficult to obtain and several assumptions have had to be made on the basis of well-documented historical telecommunications traffic, growth statistics for usage in other networks and limited information from UNEP for 1998. Other services new to UNEP, such as video-conferencing, required assumptions to be made on likely future usage of the technology by the United Nations based on emerging usage patterns in the commercial sector around the world.

29. Five types of telecommunications traffic currently utilizing, or likely in the future to utilize, the UNEPnet and Mercure communications network were identified and examined in terms of costs and benefits:

(a) Data communications;

(b) Video-conferencing;

(c) Internal United Nations fax and voice telephony;

(d) External fax; and

(e) External voice telephony.

Each of these options are examined in some detail below, together with an explanation of the nature of each kind of traffic and its importance to UNEP in the future.

30. Overall, the cost-benefit analysis below shows clearly that the potential savings for UNEP from the use of Mercure and UNEPnet are substantially greater than the costs of operating the network. Mercure also makes possible modern management options, such as video-conference services, otherwise unavailable to many UNEP regional locations and those of its partners.

31. The cost of operating the Mercure network in the biennium 2000-2001 is estimated to be $3,690,000, taking into account funds from the Environment Programme and trust funds from Norway for the development of UNEPnet and Mercure services. Of this figure, the cost of providing common data telecommunications services such as e-mail, internet and fax is approximately $2,040,000 per biennium.

32. The potential savings are summarized in table 1 below:

Table 1

POTENTIAL SAVINGS IDENTIFIED

UNEPnet services	US$ per year	US$ per biennium
Data connections (IP)	640,000	1,280,000
Video conferences	1,370,000	2,740,000
Internal voice and fax	710,000	1,420,000
External fax	1,460,000	2,920,000
External voice	960,000	1,920,000
Total saving per annum	5,140,000	10,280,000

33. While these figures may appear on the high side, they nonetheless represent the likely benefit in terms of savings that would accrue to UNEP and the United Nations in general if the Mercure network could be used optimally and the organizations involved take on a modern approach to conducting international business. Using the same basis for analysis as included elsewhere in this report, the net present value (NPV) of the Mercure system is also extremely positive. Excluding the initial investment, NPV is in the vicinity of $19,800,000. Inclusive of the investment at current values, NPV is assessed at $10,500,000.

34. The figures outlined are impressive, but the practical reality is that maximum utilization of the UNEPnet and Mercure facilities is required to reap benefits of the magnitude described. It is also clear from the analysis that by instituting cost recovery among users for access to the system, and redirection of facsimile traffic from Nairobi via optimal routes, the present cost of operating the Mercure system can be more than met. Additional savings and cost-recovery options should assure the viability of the Mercure asset for the coming five years and more, and enable provision for investment in complementary technologies in the near future.

A. Costs

35. It is useful at the outset when assessing the costs and benefits of Mercure to draw a distinction as far as is possible (see paragraph 13 above) between the costs associated with the running of the Mercure telecommunications network and those associated primarily with the information management services of UNEPnet. UNEPnet is built around the availability of Mercure, but is not wholly dependent upon it. Many of the costs associated with UNEPnet would therefore still remain if UNEP is to communicate effectively with its global family, independent of whether Mercure provides the telecommunications backbone of the network or not. The costs of developing and maintaining UNEPnet information services have thus

been separated as far as is practicable in this assessment from those costs associated solely with providing Mercure telecommunications services such as to the globally distributed secretariat and its partners. It should be remembered, however, that, without Mercure, UNEPnet would serve a limited audience (mainly in the developed world) and would do so in a more expensive and less efficient manner than via Mercure. Some services would also become unavailable at sites where Mercure provides the only adequate basis for their provision.

36. For the biennium 2000-2001, the UNEPnet and Mercure costs are broken down as follows:

(a) Mercure operations costs: A total of $2,040,000 from the Environment Fund. This figure comprises the fixed costs for sub-contracts to lease satellite capacity from Intelsat ($720,000); network management services (Swisscom: $420,000); services and maintenance contract for the Mercure installation at UNEP headquarters (KPTC: $300,000); leased line access to UNEPnet for UNEP regional offices and principal partners not served directly by Mercure ($180,000); and global parts and maintenance contracts ($420,000) for the biennium since the Mercure warranty ends in March 1999. Given that these costs are for shared telecommunications services across UNEP and its administration, supplementing the environmental information management services of UNEPnet, it is proposed that the overall standing costs of $2,040,000 for the biennium be distributed among the divisions and offices of UNEP and funds for MASC from the United Nations Office at Nairobi budget;

(b) UNEPnet operations: Total of $1,900,000 from the Environment Fund and $1,400,000 from the Norwegian trust fund. The Division of Environmental Information, Assessment and Early Warning will provide funds from the programme budget to coordinate the strategic implementation, management and development of UNEPnet and Mercure, anticipated to be $1,900,000 for the 2000-2001 biennium. Of this sum, a less clearly distinguishable proportion can be attributed to coordinating Mercure activities as distinct from providing UNEPnet services. In addition to funds from the Environment Programme, the UNEPnet Implementation Centre in Arendal will receive $1,400,000 over the biennium, in accordance with the trust fund agreement, primarily to support UNEPnet services, utilization and development. The Centre does provide support to Mercure operations, but the high degree of synergy and dependence between the two initiatives once again renders it difficult to separate costs;

(c) Estimated total Mercure costs: $3,690,000 per biennium. This figure was arrived at by apportioning the relative contribution of both the Division of Environmental Information, Assessment and Early Warning Environment Fund and trust fund contributions to Mercure activities (estimated at 50 per cent), a total of $1,650,000 per biennium, and adding the recurrent costs in 36 (a) above.

B. Benefits

37. The benefits accruing from the UNEPnet and Mercure initiatives can be considered in two ways: in simple financial terms, and in terms related to the provision of efficiency-increasing services that would be otherwise

unobtainable without the network. While these two aspects are, in many instances, closely connected, in the following assessment an effort has been made, for the sake of simplicity, to isolate the purely financial benefits of available network services. Consideration is given to the five types of telecommunications listed in paragraph 29 above, and in the same order.

1. Data communications

38. This is referred to as Internet Protocol (IP) traffic: it includes e-mail traffic and electronic discussion groups; internet services such as World Wide Web access and on-line examination of the content of remote databases; database and computer file transfer services, or file transfer protocol (FTP); and desktop video-conferencing (Internet-based, computer-to-computer video communication).

39. UNEPnet is providing IP services today, primarily through Mercure, to a large number of locations and users around the world. The number of users by mid-1999 at each site in the current network is projected to be as follows: Arendal - 25; Geneva - 200; Vienna - 20; Paris - 80; Beijing - 700; Bangkok - 60; Almaty - 25; Hanoi - 75; Kathmandu - 40; Nairobi - 2800; Manama - 50; Maputo - 30; Niamey - 25; New York - 40; San Jose - 40; La Paz - 25; Havana - 50. The total number of users is thus estimated to be 4,285.

40. To assess the cost-benefit of the IP service, Eurodata examined the cost of equivalent commercial IP services to those available via UNEPnet and Mercure from 10 companies in the Germany, Ireland, Switzerland and the United Kingdom. Costs ranged between $188 and $1,181 per annum. Assuming some economies of scale, Eurodata estimated an annual price for data communications (i.e., IP services) of $150 per annum. This figure is rather low compared to the sites where the greatest volume of traffic would originate, but nonetheless indicative for the purpose of estimation. Using the figures provided, the estimated cost benefit of providing IP services globally is therefore:

(estimated number of users) X (connection price per user) = $624,750.

2. Video-conferencing

41. Although video-conferencing, or the provision of high-capacity, point-to-point video links between UNEPnet sites, is new to most of the UNEPnet/Mercure sites. for the purpose of the cost-benefit analysis, it is assumed that the United Nations and its partners will readily assimilate this new business model. Video-conferencing in industrialized countries has, however, demonstrated cost savings for multinational companies of between 25 and 30 per cent per annum by reducing travel costs. A modest 5 per cent reduction, for example, of current secretariat travel costs in Nairobi (which currently total approximately $5,000,000 per annum) could bring about savings of $250,000 per annum, with the opportunity to substantial furtner savings. Added to this is the obvious saving of staff time in undertaking travel.

42. The current analysis undertaken by Eurodata made a conservative evaluation of demand for video-conference services for the 16 UNEPnet/Mercure sites listed in paragraph 39 above. The estimated total was 1,900 hours per annum, which represented a realistic start, as most staff members in the

organizations concerned would first have to adapt to the concept of using video-conferencing as a modern management technique. The value of this service was again calculated by comparing the cost of achieving this level of video-conferencing through commercial operators. While charges vary considerably, the Eurodata survey of charges in seven countries in Europe revealed that a realistic average cost would be $725 per hour. The equivalent cost of the service provided through UNEPnet would therefore be: 1,900 hours @ $750 = $1,377,500.

43. The actual traffic potential is believed to be much higher than this figure, once staff become accustomed to the concept of video-conferencing. Assuming a future increase of significance in the use of video-conferencing by UNEP and its partners, the only cost-effective manner in which such usage could be achievable would be through a private network such as UNEPnet.

3. Internal United Nations fax and voice telephony

44. A significant subset of fax and telephone traffic from United Nations offices in Nairobi is directed to other United Nations sites. Source data from 1995 indicate traffic to Bangkok, Geneva, New York and Vienna as internal to the United Nations. UNEPnet and Mercure could eventually accommodate all or part of this traffic.

45. To assess the possible costs associated with internal United Nations traffic, Eurodata assumed that all internal traffic was currently routed through KPTC with standard call charges. The cost of return traffic was not included in the analysis. The cost of completing a total of approximately 22,500 call-minutes monthly to the four destinations is $59,332. The diversion of internal United Nations traffic via UNEPnet and Mercure would therefore result in savings of $711,979 per annum.

4. External fax

46. This category refers to all fax traffic originating at the United Nations offices at Nairobi, destined for non-United Nations sites via the public switched telephone network. An examination of all telephone traffic from UNEP headquarters in Gigiri indicates that approximately 55 per cent of traffic originates from facsimile machines. Each month is assumed therefore to result in 55,322 minutes of outgoing fax traffic. The analysis also assumes an average call duration of two minutes in order that a call set-up charge is taken into account. This results in an estimated 27,661 chargeable fax calls each month.

47. In this analysis, Mercure is assumed to carry fax traffic to a location not within UNEPnet, from where it will pass into the public telephone network at call rates operating at those destinations. Four destinations were compared for routing efficiency and cost: Kenya, Norway, Switzerland and the United States of America. To estimate the optimum routing and minimum costs, the number of calls destined for eight different regions of the world had first to be assessed from existing fax traffic data. Charges for calls to these eight regions from UNEP headquarters were then costed according to pricing information obtained by Eurodata Foundation from four representative telecommunications operators in the countries considered as the entry point

into the public switched telephone network: KPTC, Telenor (Norway), Swisscom and AT&T (United States of America). Assumptions also had to be made regarding varying charges with time of day (peak/off peak ratio), local taxes, discounts for volume of traffic, exchange rates and average call duration.

48. Taking all these elements into consideration, the following monthly costs were estimated for fax traffic routed through one operator:

Table 2

FAX TRAFFIC COSTS

Monthly cost in US$	KPTC	AT&T	Swisscom	Telenor
Single provider	160,792	54,105	46,692	38,621

49. Overall savings of around $122,000 per month - or $1,460,000 per annum - can be made by directing fax traffic via the lowest cost entry point into the public network. Since the transmittal of fax traffic is already approved as part of the agreement between the Government of Kenya and UNEP, work has been under way for some months to implement such a solution.

50. By optimizing the routing, further savings could be made, but this approach adds a significant administration burden associated with the design of the routing table.

5. External voice telephony

51. This category applies to voice telephone traffic originating at UNEP headquarters Nairobi, destined for non-United Nations sites via the public switched telephone network. If the remaining voice traffic were also routed via UNEPnet (subject to approval by local authorities), similar savings could be realized in addition to those coming from the fax network.

52. The analysis of past traffic from UNEP Headquarters indicates that the remaining 45 per cent of telephone traffic represents some 45,263 minutes per month. The net result is a total estimated number of calls amounting to 7,544.

53. The assumptions used in the analysis for voice traffic are generally the same as for the fax traffic with one or two important differences. First, the average call duration for international traffic is set at six minutes. If all calls were made through the lowest cost supplier in the manner describe for fax traffic, the savings over current costs would amount

to some $100,000 per month or $1,200,000 per annum. There are, however, other considerations necessary with regard to the avoidance of too many up and down-links between satellite earth stations and the satellites themselves, which can cause degradation of voice quality. These considerations are less significant for fax traffic and were not taken into account in the previous analysis. With these considerations in mind, table 3 below indicates in bold type the optimal (not necessarily the cheapest) routing and associated monthly costs for voice traffic destined to other parts of the world from UNEP headquarters in Nairobi.

Table 3

VOICE TRAFFIC FROM UNEP HEADQUARTERS IN NAIROBI

	MONTHLY COST IN UNITED STATES DOLLARS				
REGION	KPTC	AT&T	Swisscom	Telenor	Selected
Africa	**23,055**	15,456	13,835	12,385	23,055
Asia	**17,642**	8,241	6,313	5,318	17,642
Central America	7,156	**2,632**	3,299	3,066	2,632
Europe	33,682	11,250	5,004	**2,254**	2,254
Middle East	8,281	2,965	3,199	**2,285**	2,285
North America	33,008	**782**	3,796	3,098	782
Pacific	2,244	**765**	610	516	765
South America	6,489	**2176**	2,147	2,160	2,176
Total	131,557	44,268	44,268	31,082	51,592

54. Using the above routing table, and taking into account quality of voice service, realistic savings of around $80,000 per month or $960,000 per annum could be realized by voice traffic over the Mercure network.